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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,482	11/14/2003	Aaron Bond	TNT-115US	9206
23122	7590	12/21/2005	EXAMINER	
RATNERPRESTIA P O BOX 980 VALLEY FORGE, PA 19482-0980			VAN ROY, TOD THOMAS	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/713,482	Applicant(s) BOND, AARON	
	Examiner Tod T. Van Roy <i>[Signature]</i>	Art Unit 2828	<i>[Signature]</i>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 11-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election of claims 1-10 in the reply filed on 11/14/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaede et al. (US 4669086).

With respect to claims 3 and 6, Kaede discloses an optical light source comprising: a laser source (fig.1 section 123), and a monolithically integrated semiconductor optical amplifier (SOA) optically coupled to the laser source (fig.1 section 122, would function as an optical amplifier due to the presence of the active layer, #102, as well as the independent current control to stimulate the gain region and allow for amplification of the optical signal), a current modulator electrically coupled to the laser source to provide a first modulated drive current to the laser source (fig.1 #301), and a phase shifter electrically coupled to the current modulator and to the SOA (fig.1 #303),

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the phase shifter shifting a first modulated drive current phase of the first modulated drive current to create a second modulated drive current, and the phase shifter providing the second modulated drive current to the SOA.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaede.

With respect to claim 1, Kaede teaches a method of generating dithered laser light comprising the steps of: amplitude modulating a laser drive current of the laser to generate a modulated laser light with optical linewidth dithering (fig.1 #301, using a low frequency dithering signal, col.5 lines 44-46), coupling the modulated laser light into the SOA (fig.1 #122), and phase shifting the drive current of the SOA out of phase with the

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laser drive current to generate the dithered laser light (fig.1 #303), including the amount of phase shift vary depending upon the amount of the applied frequency (col.5 lines 43-58). Kaede does not teach specifically inverting (180 degrees) the phase. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the light source and phase variation of Kaede with a 180 degree, inverted, phase shift in order to use a different modulation frequency, as taught by Kaede.

With respect to claims 4-5, Kaede teaches the optical light source as outlined in the rejection to claim 3, including the amount of phase shift vary depending upon the amount of the applied frequency (col.5 lines 43-58), but does not teach specifically inverting (180 degrees) the phase. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the light source and phase variation of Kaede with a 180 degree, inverted, phase shift in order to use a different modulation frequency, as taught by Kaede.

Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaede in view of Yano (US 6108125).

With respect to claim 7, Kaede teaches the optical source as outlined in the rejection to claim 3, but does not teach the phase shifter to amplify the second modulated drive current before providing it to the SOA. Yano teaches an optical device wherein a phase shifter current (fig.7 #316) is amplified (fig.7 #317) before being applied to an optical amplifying component (col.6 lines 25-26). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the

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optical source and phase shifted current of Kaede with the amplified current of Yano in order to increase the amount of gain seen by the optical signal and allow for an increased optical output.

With respect to claim 8, Kaede and Yano teach the optical source and phase shifted current as outlined in the rejection to claim 7, but do not teach the phase shifted current to be attenuated before being applied to the SOA. It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the amplified current of Yano with an attenuated current in order to reduce, rather than increase, the optical output to fit the given application.

With respect to claims 9-10, Kaede teaches the optical source as outlined in the rejection to claim 3, but does not teach the use of an integrated electroabsorption modulator (EAM). Yano teaches an optical device which utilizes an integrated EAM. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the optical source of Kaede with the integrated EAM of Yano in order to make use of the pulsed output function of the EAM for data transmission, as well as to integrate the EAM to reduce the amount of optical axis alignments needed (Yano, col.5 lines 55-65).

Allowable Subject Matter

Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 2 is believed to be allowable based on the fact that the prior art was not found to teach the method of adjusting the phase of the modulation current driving either the laser or the SOA in order to control the light output amplitude. The prior art was found to teach methods of adjusting the amplitude of the current, or changing the current input to phase control sections to accomplish the amplitude stabilization, or adjusting the phase, in conjunction with other components, to adjust the output wavelength, but it was not found to teach adjusting the phase of the current itself to control the output power.

Conclusion

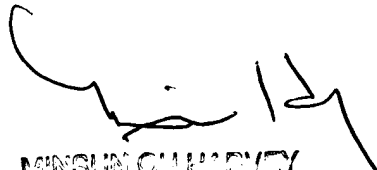
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVR



MIN SUN C. HARVEY
Patent Examiner